



CONCRETE CRIB-TYPE RETAINING WALLS FIELD SECTION 721

721.1 Scope. To establish procedures for the inspection and reporting of precast units for use in concrete crib-type retaining walls manufactured at a commercial precast manufacturing plant. Should the contractor elect to precast his units at the jobsite, the usual system of reporting will be used. Reinforcing steel and portland cement concrete shall be inspected in accordance with the applicable sections of this Manual.

721.2 Apparatus.

- (a) Rule with suitable graduations to accurately measure the material to be inspected.
- (b) OK - MoDOT stamp.
- (c) Weather resistant marking materials.

721.3 Procedure. Acceptance of precast units for use in crib-type retaining walls is to be based on the inspection of materials being incorporated into the sections; compressive tests on cured concrete cylinders; and inspection of the finished section, including amount and placement of reinforcement.

721.3.1 Forms. The inspector shall insure that forms and form work comply with the applicable requirements of Specification Sec 703 and the plans for the particular project.

721.3.2 Placement of Reinforcement. The inspector shall insure that the placing and tying of reinforcing bars conform to the applicable requirements of the plans and Specification Sec 721.3.1 and 706. It is the responsibility of the inspector to insure that all reinforcing steel is properly placed.

721.3.3 Placing and Consolidating Concrete. The inspector shall insure that the placing, consolidating, and finishing of concrete is in accordance with the applicable provisions of Specification Sec 703.

721.3.4 Concrete Testing. During placement of the portland cement concrete, tests shall be performed to insure that the requirements of Specification Sec 721.2.2 are met. Portland cement concrete shall be inspected in accordance with [Field Sec 501](#) of this Manual and Sec 500 of the Construction Manual. Tests for determining consistency and air entrainment shall be performed. At least 2 sets of specimens for compressive strength per pour shall be prepared in accordance with Sec 501.16.5 of the Construction Manual and cured in the same manner as the units.

721.3.5 Curing. The inspector shall observe curing operations to verify that the requirements of Specification Sec 721.3.2 and 703.3.17 are being met. The inspector shall insure that membrane curing is not used.

721.3.6 Form Removal. Precast concrete members shall be cured a minimum of 12 hours after pouring before forms may be removed. The inspector at the fabricating plant is responsible for making and testing compressive specimens to determine when forms may be removed and curing discontinued in accordance with Specification Sec 721.3.2. Compressive tests should be performed at the fabricating plant or an approved commercial testing laboratory. At the discretion of the district Operations Engineer, specimens may be tested



using District equipment. If questionable results are obtained, the compressive specimens shall be submitted to the Laboratory. At least one set of regular 28 day cylinders shall be submitted to the Laboratory on each project to check the portland cement concrete mix design, with a minimum of one set per month of operation of precast plant or more often as deemed necessary. Form C-701 is to be used as an identification sheet with the distribution and title modified as required.

721.3.7 Marking. The inspector shall insure that each precast unit is identified with the date, manufacturer, and identification number. These markings may be indented on the unit or painted thereon with waterproof paint. These markings shall be located as shown on the plans.

721.3.8 Inspection of Completed Units. The finished units are to be examined for conformance to dimensions, workmanship and marking in accordance with Specification Sec 721.3.2 and the plans. Accepted sections are to be stamped with an "OK - MoDOT" by the inspector.

721.3.9 Records. The plant inspector shall maintain a complete file of all data pertaining to the manufacture of the concrete units, either at the manufacturing plant or in the District Office. Complete and accurate records of each manufacturing operation shall be kept in a field book. All pertinent data which in any way affects or influences the construction procedures or completed members shall also be recorded in the field book. Data shall be entered in the field book as soon as it is known. Field notes shall not be copied but shall be kept exactly as they are originally recorded.

721.4 Report.

721.4.1 Materials for use in precast units shall be reported as shown in the applicable sections of this Manual. The report is to indicate acceptance, qualified acceptance, or rejection. Appropriate remarks, as described in [General Sec 7.1.2](#) of this Manual, are to be included in the report to clarify conditions of acceptance or rejection.

721.4.2 Distribution of the reports is to be as shown in the corresponding sections of this Manual except that the copies normally forwarded to the Resident Engineer shall be furnished to the inspector at the precast manufacturing plant. The reports shall be marked "General" and the name of the precast concrete manufacturer must be shown. The material is to be shown for use in "Precast Concrete Units". The plant inspector located at the concrete proportioning plant shall furnish a plant inspector's daily report on Form M-46 for each day's pour identifying the units manufactured from that pour. The name of the manufacturer or set-up must be shown. The original copy of this report shall be forwarded to the Division Engineer, Materials. The duplicate copy shall be furnished to the district Operations Engineer supervising operations at the manufacturing plant. The triplicate copy shall be retained by the plant inspector for the plant records.

721.4.3 When precast concrete units are delivered to a given project, Form M-31R shall be completed with distribution per [General Sec 7.1.7.2](#) Class A.

Distribution of reports for materials purchased under a Department purchase order is to be as described in [Field Sec 2001](#) of this Manual.

